Climate Action Plan Opportunities Framework
Hillsboro, OR

March 2012

CITY OF HILLSBORO

New Energy Cities

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Introduction

The world stands on the cusp of a profound transition in how we produce, distribute, and utilize energy from an inefficient system dominated by a few centralized and polluting technologies to a much cleaner, smarter, diversified, and efficient system.

The drivers are many: volatile costs for traditional fuels, instability in the oil-producing nations of the Middle East, and serious health and environmental threats are pushing us to address our dependence upon fossil fuel. At the same time, capital flows into new energy companies combined with skilled clean energy entrepreneurs, engineers, and business strategists are pulling the clean energy economy forward.

While fortunes will be made and lost in the global race to commercialize new energy technologies, *communities have much to gain by taking charge of their energy future and driving sustained financial and community investment into the local built environment and energy infrastructure.* At a time when resources are becoming scarce, the communities that embrace conservation and efficiency broadly will have a competitive advantage over those that continue to assume an infinite and cheap supply of energy and natural and financial resources.

In communities across America, local residents, businesses, and public agencies spend millions of dollars each year to buy energy—often dirty and inefficient—from outside their borders. By using energy more efficiently and producing more energy locally, communities can reduce their outflow of energy dollars, keeping more dollars circulating among local businesses closer to home. In addition, when communities harness millions of dollars for energy efficiency retrofits and new energy infrastructure projects, they create good, family-wage local jobs in the trades.

Most communities will follow paths well-trodden; a handful will pioneer the new energy future and create the playbook for the rest to adopt. The City of Hillsboro is in the second category, among the vanguard stepping forward chart a new energy future. If this level of leadership were easy, hundreds of others would have done it already. While the Hillsboro community pursues a new path for energy use and generation that may serve as a model for other communities, it will largely measure its success based on how it improves the lives of its residents and how its actions will help preserve the City's resources for years to come.

With that in mind, the purpose of this Climate Action Plan Opportunities Framework is to guide the collaborative work of Hillsboro's public, private, nonprofit, and civic leaders in creating a model for new energy leadership based on the goals and priorities set forth at the March 9, 2012 New Energy Cities Workshop. It suggests a sequence of prioritized actions for the 6-month, 18-month, and 36-month time horizons designed to put the pieces in place, build the capacity, and establish the trajectory to set and accomplish ambitious, long-term community goals.

Background

Climate Solutions, a Northwest-based nonprofit organization whose mission is to accelerate practical and profitable solutions to climate change, launched the New Energy Cities program in 2009 to assist a diverse handful of pioneering small- and medium-sized communities to embrace a new energy future.

The program focuses on a comprehensive systems approach that integrates energy efficiency; smart power grids; green intelligent buildings; plug-in electric vehicles; energy storage; and renewable power sources, such as solar, wind, geothermal, and biomass. Maximizing local investment and economic development is a key goal of the New Energy Cities program. Ultimately, New Energy Cities aims to inspire hundreds of communities to replicate and adapt successful models of city-led energy transformation.

The City of Hillsboro and its community leaders have laid important groundwork for national clean energy leadership. Corporate leadership from Intel, SolarWorld, ClearEdge Power, and Epson, and City programs such as Hillsboro Solar Advantage, have put Hillsboro on the national map in terms of clean energy innovation. Strategies generated in the Hillsboro 2020 community visioning process generated important material for the City and partners to further this existing leadership.

Continuing its efforts to catalyze community-wide clean energy development, the City of Hillsboro hired the New Energy Cities team in 2011 to facilitate an invitation-only Workshop to create a Climate Action Plan Opportunities Framework that leveraged concurrent local energy efforts. From that point until the March 9, 2012 Energy Summit, the New Energy Cities team and the City of Hillsboro collaborated to facilitate a productive meeting of community leaders to chart a vision for how the Hillsboro community might embrace a new energy strategy.

During the Workshop the New Energy Cities team provided participants with a comprehensive view of community energy systems, and identified clean energy and energy efficiency opportunities to consider when creating a new energy future for the City. The team presented the City of Hillsboro Energy Map (Appendix A) to illustrate the sources and uses of energy in the community and the corresponding carbon footprint profile. Participants also began the development of a Roadmap for the City based on input of Workshop participants, which Climate Solutions then fleshed out to draft this Opportunities Framework.

Framework

This Opportunities Framework provides the City of Hillsboro and its key stakeholders with suggested actions in a phased approach. This approach will enable the Hillsboro Sustainability Task Force to:

- Connect discrete initiatives to a larger vision and engagement strategy
- Leverage current assets
- Create a pathway to additional resources over time
- Get started on a 20-year program to create a new energy system for the City

To position the City of Hillsboro for early success, this Opportunities Framework is organized into the following sections:

I.   *Putting the Pieces in Motion* – the first six months – addressing key capacity needs, building alignment and support for actions, determining the leadership governance structure, and setting things in motion.

II. *Establishing Catalytic Projects, Policies, and Programs* – months six through 18 – rapid implementation of catalytic projects, linked to key strategies, substantial policy and resource development through extensive community engagement.

III. *Setting the Strategy* – months 18 through 36 – refine and focus a long-term strategic plan for a new energy system, reflecting experience gained from the earlier catalytic projects and new policies created as a result of lessons learned in the first 18 months of the project.

The underlying premise of this Opportunities Framework is that the City of Hillsboro is in a position to offer real leadership on new energy systems. Political leaders are engaged and motivated. Citizens and the business community are involved and supportive. Portland General Electric, the community's electricity utility, is willing to collaborate on innovative new solutions. Companies such as Intel, SolarWorld, ClearEdge Power, and Epson are leaders in clean energy and sustainability, and the Chamber of Commerce is a willing partner in these regards.

This Opportunities Framework builds upon the excellent work that is already in place (Appendix B). It seeks to foster decisions and accelerate implementation of an aggressive and comprehensive strategy that will move Hillsboro into the forefront of the Northwest in clean energy leadership.

Phase I: Getting Started–First Six Months

The first six months of this Opportunities Framework—April through September, 2012 — will be a key phase during which the City will come together around goals, convene the Hillsboro Sustainability Task Force as a governance model for consistent leadership, and engage its community stakeholders around catalytic projects to move forward. With programs such as Hillsboro Solar Advantage already underway and a strong list of new projects and policy initiatives, one critical step at the outset will be to determine what capacity exists in the City to move ahead, as well as how to organize the community for implementation. The Hillsboro Sustainability Task Force, which the City will convene in the near future, will be the primary driver of implementation. However, other community partners may see value in starting work on some projects, such as energy literacy, sooner.

Phase 1 can be divided into the following action areas:

Action Areas
1. Defining Goals
2. Establishing Leadership
3. Developing Catalytic Projects
4. Financing Options
5. Developing Policy
6. Engaging Community

Defining Goals

Shared goals will help make the community's aspirations tangible and will provide the context for prioritizing actions that can put the community on its desired long-term energy trajectory.

While Hillsboro has completed a greenhouse gas emissions inventory for City operations, no such inventory or set of goals exist for the City on a community-wide basis. The first action that the Hillsboro Sustainability Task Force should take, as the governing agent of the Climate Action Plan Opportunities Framework, is to collaborate in setting community-wide energy goals that will guide current and future action planning. This has several advantages:

1. Developing a shared clean energy vision to guide participants in their respective projects
2. Securing a level of ownership and accountability from participants to pursue specific projects and track results over the long term, as individual parts of a broader framework
3. Informing strategic region-wide decision-making about the prioritization and sequence of otherwise disparate projects

Defining Goals: Action 1 – Set community-wide goals for clean and efficient energy use

The New Energy Cities team has worked with a number of cities around the Northwest to set goals relating to long-term energy use reduction, and has reviewed goals from other cities around the US. These can be generally grouped in the following categories:

- Sector-based energy use reduction goals (e.g., all buildings in Hillsboro)
- Community-wide targets of market penetration for clean energy approaches and technologies (e.g., units of housing retrofitted with renewable energy, number of electric vehicles purchased as percentage of total market)
- Community engagement targets (e.g., number of households reached with energy efficiency information)
- Organizational targets (e.g., establishment of quarterly government-community meetings to guide clean energy project planning)

These goals are not mutually exclusive. In fact, if adopted together in a single framework, they will guide the collaborative development of future energy projects.

At the March 2012 Workshop, multiple participants expressed enthusiasm for the possibility of becoming one of the first cities in the country to go "net zero." Portland General Electric has provided the community with affordable and reliable power, and Intel has helped Hillsboro achieve a top-two ranking in green power purchasing nationwide. With these and other willing partners the City's aspirations to become "net zero" are within reach.

- Define areas (e.g., greenhouse gas emissions, energy, water, waste) in which the community wants to become net zero
- Set a time horizon (e.g., the year 2030) by which the community will aim to achieve this goal
- Link to specific targets for industrial, residential, and commercial energy efficiency, renewable power generation, and district energy
- Build on existing PGE deployment of smart meters in homes and commercial buildings
- Start with public institutions, such as municipal facilities and operations, university and college campuses, schools, and hospitals, and proposed eco-districts
- Make net zero projects more attractive to organizations that are wary of loan terms exceeding five years

Please see Appendix C for a sample of goals from other communities participating in the New Energy Cities program.

Because goal-setting lays such fundamental groundwork for action planning, this is currently the only action recommended in this category. It also elaborates on Leadership Action 2 (see the "Leadership" section).

Establishing Leadership

Success for the City of Hillsboro requires consistent, strategic leadership; clear priorities that help individual organizations work together; innovative programs that involve key stakeholders; and attention to performance.

Accordingly, the vision for this Opportunities Framework is based on a collective, strategic effort that crosses the Hillsboro community. In order to pursue this vision effectively, the City will need to establish an effective and efficient governance structure to guide its implementation, in the form of the Hillsboro Sustainability Task Force.

Leadership Action 1—Establish the Hillsboro Sustainability Task Force

Building on the success of the Hillsboro 2020 community visioning process, the City will establish a Hillsboro Sustainability Task Force (HSTF) with representation from all parts of the community to implement this Opportunities Framework.

- Select trusted leaders to represent different interests in the community
- Charge the task force with determining the structure and process for how the City will implement its clean energy strategy
- Implement the chosen model with appropriate process and focus

Leadership Action 2—Enhance community relationships

The City of Hillsboro is very fortunate to have the potential to partner with Portland General Electric, Intel, SolarWorld, ClearEdge, Epson, and other entities that have significant resources and expertise in the clean energy and sustainability fields. As the City of Hillsboro gets underway scoping catalytic clean energy projects, it can take advantage of these rich community assets.

- Engage the Chamber of Commerce's Real Estate Roundtable around the question: "What incentives and code reforms will make the difference for developers' decision-making?" (see Catalytic Project 1)
- Solicit the interests of Oregon state agencies, such as the Oregon Department of Energy and Oregon Department of Transportation (e.g., Solar Highway Program), in partnering with the City of Hillsboro and community members
- Tap the expertise of numerous other entities, including but not limited to Energy Trust of Oregon, Clean Energy Works Oregon, Umpqua Bank, and LiveLight, in program design and financing
- Work with PGE to help with education and outreach that builds on the utility's programs in renewable energy and smart meters

Developing Catalytic Projects

The New Energy Cities approach emphasizes using ambitious pilot projects to test initiatives and encourage innovation. These pilot projects are designed to address existing barriers to transform the energy system of a community and their success is measured by how effectively they accomplish this. Such pilot projects are catalysts for action, serve to inform longer-term strategies, build an understanding of economic benefits, and attract additional investment capital.

Early pilot projects should be designed with the following characteristics:

- **Quick implementation timeline** – First pilot projects could get started quickly, which means any required construction work could begin in 2012 or early 2013.
- **Applicable** – Pilot project results and experiences should transfer to and inform subsequent projects.
- **Financially viable** – Because longer term financing tools will take time to build, the early projects may need to test a variety of financial tools in able to learn which will be the most successful.
- **Engaging** – Provide opportunities to engage the community and stakeholders actively and visibly to enhance their understanding of the projects, their links to the vision, and their potential for broad benefits.
- **Measurable** – Early actions should be relatively simple to measure, at least to some degree, so that the results can be reported and used to inform subsequent actions.

During the March 2012 New Energy Cities Workshop, participants identified several catalytic projects for the City's transition to a clean energy future, under the following categories:

Catalytic Project Development: Action 1—Create, support, and market incentives for energy efficient design and development
The economic success of the City of Hillsboro is tied in no small part to the presence of a robust business community. At the same time, the business community is able to attract and retain top talent because of Hillsboro's excellent quality of life and strong identity as a city that supports green lifestyles. Toward this end, the development community plays a significant role in shaping the landscape of the community – through new building construction and neighborhood design – to make it attractive to potential new residents and employers.

This catalytic project consists of seeking the feedback of the development community on what will motivate them the most to invest in energy efficient design and development and then responding to that feedback by creating capacity within the City of Hillsboro to deliver a package of incentives and tailored technical assistance. A driver behind this catalytic

project is the notion of using carrots rather than sticks to stimulate more energy efficient development – not mandating it, but rewarding it.

1A. Engage the Chamber of Commerce's Real Estate Roundtable around the question: "What incentives and code reforms will make the difference for developers' decision-making?"

- Set a goal first (e.g., net zero) to establish the focus of the conversation regarding types of design and development (e.g., energy efficiency, renewable energy) the City wants to encourage (see Defining Goals section above)
- "Starter fuel" ideas include: fast-track permitting, tax credits, reduced development fees for voluntary adoption of energy efficiency, voluntary energy performance scores with building labeling, adoption of a "Reach Code"[1] currently being entertained at the state level. (Note that some jurisdictions cap incentives such as fast-track permitting and reduced development fees, to encourage early adopters of energy efficiency design while avoiding adverse effects of such changes (e.g., diluting the permitting process, reducing City revenue). See Policy Initiatives section for additional detail.
- Consider ways to address split incentives between building owners and tenants

1B. Create a marketing package and "concierge" service for the City to promote energy efficiency among developers

- Establish and market a program of incentives, based on input collected from the Chamber of Commerce's Real Estate Roundtable
- Hire a point person in the City with expertise in clean energy program design and finance, to provide expertise and technical assistance on clean energy finance to stakeholders, such as project developers choosing the sustainable development pathway
  - Identify an FTE opening, with potential technical and financial support from Energy Trust of Oregon, within the City of Hillsboro

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[1] Regarding the State of Oregon's proposed Reach Code: "The primary goal of the code is to provide an optional set of statewide construction standards for energy efficiency that exceed the requirements of the state's mandatory codes. The Reach Code will act like a statewide alternate method: builders will have an optional 'green' path and jurisdictions can be assured the state-of-the-art construction methods are sound. Discussions around the Reach Code will cover a variety of topics and may include: mechanical systems, lighting designs, overall building design (both residential and commercial), plumbing practices and products. The Committee will explore tactics for aligning the code with federal, state, and local financial incentives." Source: http://www.cbs.state.or.us/bcd/committees/11reachcode.html.

Catalytic Project Development: Action 2—Establish an eco-district pilot
Like many forward-looking cities around the US, the City of Hillsboro has already begun to explore the possibility of creating an eco-district: a neighborhood or another defined community area with a broad commitment to ambitious environmental sustainability goals. Eco-districts can provide several benefits, including aggregating demand to attract capital; creating economies of scale for implementation of energy efficiency, clean energy, district energy, and smart grid programs; and connecting groups of homeowners and businesses that are committed to pioneering, tracking, learning from, and sharing experiences.

2A. Identify possible sites and design elements for an eco-district
Campus projects and planned construction are often ideal candidates for an eco-district framework, so that commitments can be executed and tracked from the ground up. Amber Glen is a leading eco-district candidate. Another idea that was proposed in the March 2012 Workshop is to embed an eco-district framework into the Downtown Community Plan and the related urban renewal zone.[2]

The design of an eco-district could include a range of possible elements, depending on the specific stakeholder goals.

- Adopt a net zero goal (e.g., greenhouse gas emissions, energy, water, waste)
- Incorporate energy performance scores and building labels into new construction
- Gas-free zone
- Encourage locational efficiency / "clustering" of new buildings and infrastructure, to lay the groundwork for district energy
- Analyze infrastructure opportunities against local natural resources (e.g., sewer heat, waste heat from nearby industrial or commercial buildings, geo-exchange, aggregated rooftop solar) for district energy potential
- Consider establishment of an Energy Improvement District, with assessment of fees similar to a Business Improvement District
- Other elements worth exploring include industrial efficiency through combined heat and power applications, which President Obama and USEPA have made a national priority; and developing a comprehensive approach to solar thermal installations. On the latter, consumers could leverage the recent ODOE Small Conservations Grant Opportunity; PGE and/or the City could offer rebates for upgrades on hot water heaters.

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[2] "Urban renewal is a financing tool used to stimulate suitably-located growth in underdeveloped areas. The tool is called Tax Increment Financing - funding derived from the increase in taxable property values over time within an urban renewal area (URA). As property values increase within the district because of new investment and appreciation of existing property, the resulting increase in property taxes (the 'tax increment') is captured and used to pay off the bonds." Source:
http://www.ci.hillsboro.or.us/EconomicDevelopment/DowntownByDesign/FAQ.aspx.

Catalytic Project Development: Action 3—Promote energy literacy and efficiency through an energy challenge partnership

The Hillsboro community has already demonstrated an appetite for clean energy, through the PGE Clean Wind program and Hillsboro Solar Advantage. PGE has also laid the groundwork for widespread energy data collection and tracking, through the widespread deployment of smart meters to residential and commercial users. Leveraging these existing accomplishments and assets, Hillsboro is poised to expand its community's energy literacy and galvanize residents and businesses to make great reductions in energy use.

3A. Create a pilot using smart meters to aggregate data and feedback from homeowners and building managers on building energy behavior change

PGE's community-wide deployment of smart meters represents an important opportunity for baselining, measurement, and verification of energy use reductions, which are not available to many communities nationwide. Hillsboro can leverage this unique opportunity as the basis of an energy literacy and energy reduction campaign, similar to OPower and other models underway around the country.

- Review/adopt the OPower model (see Appendix D for Further Resources)
- Work with PGE to identify and engage key community partners (e.g., homeowner associations, building managers, schools, water district managers, business community leaders)
- Explore whether Hillsboro can leverage expertise from the federally funded smart grid work underway in Salem

3B. Create student-driven 'gamification' competitions to use technology to reduce energy and water use in the community

Tapping the enthusiasm of Hillsboro youth would be an excellent way to spread energy literacy among families and communities of the area. The collective workforce of Hillsboro, including employees of Intel and other companies, also represent an excellent asset – in the form of potential technology mentors.

- Engage key technology instructors and students from local high schools to design the competition's parameters and implementation strategy
- PGE, Intel, and others could serve as potential sponsors (incubators, mentors), partnering with school districts
- Tie in Hillsboro's incubator program - The Indus Enterpreneurs (TIE) - located in the Tanasbourne area)
- Fold in industry mentors from Intel and PGE
- Have students create a marketing campaign
- Identify a leader/champion/coordinator
  - TIE, along with Software Association of Oregon (note that SAO has an education foundation that drives student technology programs), may be interested in this role

- Perhaps link with Portland CC Rock Creek - solar project tied to curriculum

3C. Develop a community-wide energy literacy campaign

Building upon the above two projects, Hillsboro could launch a community-wide energy literacy campaign through graphics, social media, and creative educational tools.

- Develop an "energy use meter" to be displayed publicly, allowing community members to see how much energy has been used in aggregate
- Create a similar graphic for the City of Hillsboro and/or PGE newsletter for energy customers to see how their individual home or business energy use contributes to the community total
- Develop a social media component (e.g., Facebook) to promote energy literacy
- Ensure an educational element of other catalytic demonstration projects and how they fit within the context of community-wide energy use reduction
- Explore the possibility of establishing a retrofit education and tool exchange program for homeowners
  - Lend/borrow tools for home energy retrofits
  - Host classes on home weatherization and other energy upgrade options

Catalytic Project Development: Action 4—Expand renewable energy programs

Hillsboro has already demonstrated a huge appetite for green power purchasing and local renewable projects. These catalytic projects leverage that existing legacy; they should be considered in context of clear community targets for renewable energy adoption (see Defining Goals section).

4A. Develop solar arrays on excess City properties

Municipal facilities and properties are an excellent place to expand the City's leadership on solar, as well as measure payback and develop the business case for investment.

- Start by inventorying properties available and key characteristics (solar regime, proximity to energy user, etc.)
- Prioritize sites with long-term vacancies
- Look at third-party financing models - either leasing land or sharing in revenue generated
  - Explore feed-in tariffs
- Consider coordinating with other cities to buy panels in bulk
- Tie this into the City's branding campaign to position Hillsboro as a green economy city, as well as the city's green export strategy

4B. Explore two-fold community solar - Solarize and ODOT

This two-fold project would tap the community's large appetite for solar. Both elements involve aggregating neighborhood-level demand for solar energy. The first – a "Solarize" model – would involve installing small-scale distributed solar PV panels locally on home rooftops. The second –through ODOT's Solar Highway program – would offer slices of a large-scale solar array in an "Adopt a Solar Highway" model for those homeowners with properties that are not suitable for solar installation. In the latter case, ODOT could broker a relationship in which PGE and the community jointly own the solar array.

- Set awareness metrics to engage public interest
- Seek aggregation of neighborhood customers
- Leverage and expand Hillsboro Solar Advantage and no-cost solar permitting

4C. Develop solar parking structures that charge EV parking stations and capture runoff water

This exciting catalytic project could make use of the parking lots that are currently widespread around Hillsboro – shading cars with new parking structures that are installed with solar PV to charge EV stations, and potentially also using material that funnels runoff water into capture systems before it hits the pavement and collects toxins.

- Explore both public and private applications, including municipal, commercial, and industrial facilities

4E. Leverage / expand industrial and commercial Green Power Purchasing

Hillsboro can build on its significant green power purchasing legacy, which has to this point been enabled by Intel's notable investments, by promoting similar purchases among more of the business community and encouraging them to invest in projects within the Hillsboro area. Epson and others, including companies with incoming data centers, have already demonstrated their receptivity to these ideas, with a strong background in sustainability.

- Explore whether future money for green power purchases can be allocated to local projects within Hillsboro

Financing Options

Financing for clean energy is changing rapidly as communities, utilities, and the financial sector explore new business models and capital structures to accelerate deployment of both efficiency and clean energy projects. This effort requires innovative financing tools to construct a strong business case for individual projects. The most

promising financing tools will be those that facilitate the development of projects identified above.

At the March 2012 Workshop, the facilitated session did not yield any specific ideas on financing mechanisms related to the projects that participants brainstormed. As the Hillsboro Sustainability Task Force identifies projects to implement, financing strategies will need to be developed in more detail to support them.

Developing Policy

The transition to a clean energy economy requires a supportive local policy environment. Workshop participants identified numerous policy options for decision-maker consideration. New Energy Cities suggests the following action items for potential policy initiatives:

Policy Initiative Action 1—Building Energy Use

Having accurate information about a building's energy usage is a key component for defining an energy efficiency retrofit strategy. Just like an MPG rating informs a vehicle owner about a car's efficiency, a building energy score can do the same for building owners.

This section considers a range of actions that encompass the various building sectors. As described previously, the City of Hillsboro can start by engaging the Chamber's Real Estate Roundtable in conversation about energy efficient design and development (see Catalytic Project 1). This engagement should build support for the use of specific tools, such as energy performance scores, concierge service packages, and neighborhood targeting/marketing. Real estate professionals, including appraisers, should also be engaged early in the process of developing and implementing new projects.

Once this level of engagement has been established, opportunities exist to begin enhancing the economic motivations that can increase participation. Several potential policy tools are listed below:

1A. Improve Permitting Process to Incentivize Energy Efficient Design and Building Retrofits: The City could enhance opportunities for energy efficiency design and development and building retrofits during "intervention points" in the permitting process:

- Reduce development fees when developers commit to a certain standard of energy efficient design and development
- Require energy assessments with utilities early in the permitting process
- Include greenhouse gas emissions analysis in SEPA documents

- Institute "fee-bate" provisions, whereby building permit applicants who plan more efficient remodels or new construction can earn a discount on permit fees
- Prioritize permitting for projects planning to achieve greater energy efficiency
- Permitting green building at the time of sale and building energy policy into the building design and development

1B. Building Energy Disclosure: The City may require or incentivize building owners to submit their energy usage information to the EPA's Portfolio Manager system. The Portfolio Manager system is a free software program that compares the intensity of energy use in a building to similar types of buildings across the country. It then attributes a score from 1-100 to the building which represents its energy efficiency coefficient. By requiring this information at lease or sale, the City can help the real estate industry extract a return on energy efficiency.

1C. Building Energy Performance Incentive or Requirement: The City may require or incentivize building owners to reach a minimum score for energy efficiency through the Portfolio Manager systems.

1C. Home Energy Assessment Requirement at the Time of Sale: The City may require or incentivize home energy assessment at the time of a residential sale. This requirement would provide energy efficiency information to customers at a moment of opportunity for retrofit investments.

1D. Building Energy Assessment Requirement at the Time of Permit: Some municipalities around the country, such as Blaine County, ID, require that Home Energy Ratings (HERs)[3] be undertaken when large additions or new structures are planned.

Policy Initiative Action 2—Codes and Zoning
Identification of zoning barriers and continuous improvement of the City's zoning laws to make renewable resources easier to install.

- Explore the adoption of the "Reach Code" currently under consideration at the state level (see Catalytic Project 1)

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[3] A Home Energy Rating is a measurement of a home's energy efficiency, used primarily in the United States. Home energy ratings can be used for either existing homes or new homes. A home energy rating of an existing home allows a homeowner to receive a report listing options for upgrading a home's energy efficiency. The homeowner may then use the report to determine the most effective ways to upgrade the home's energy efficiency. A home energy rating of a new home allows buyers to compare the energy efficiency of homes they are considering buying.

Policy Initiative Action 3—Mobility and Transportation Alternatives
The public transportation system provides another major opportunity for the City of Hillsboro to build on its New Energy Cities program. The use of fossil fuels for transportation is a substantial component of Hillsboro's energy use and cost. Three fundamental strategies can reduce this impact—making fewer, cleaner, and more cost-efficient trips.

3A. Electrification of the Transportation System: Shifting the transportation fuel source from fossil to clean electricity is one of the most effective carbon reduction strategies in the Hillsboro community. With almost 30 electric vehicle charging stations already installed in Hillsboro and more on the way, now is the time to stimulate demand for EV ownership and use.

- Charging station mandates for multifamily construction.
- PHEV or EV preference for large employer fleets.

Engaging Community

An informed and active community is vital to creating catalytic projects, and to embracing the policy and program decisions necessary for success. A robust, sustained outreach and education effort has to receive priority attention for any community aspiring to become a New Energy City.

Community Engagement Action 1—Community Engagement around Energy Savings
- Craft an energy literacy framework that aligns with the vision and goals that the City of Hillsboro intends to pursue (see Catalytic Project 3)
- Find the "spark plugs" in the community to create a groundswell of support for energy literacy

Community Engagement Action 2—Communications and Messaging
Effort should be made to develop messages to different audiences around the clean energy initiatives that the City of Hillsboro is embracing and why.

- Begin developing central themes and brand identity
- Segment audiences, identify how they align with themes and brand
- Create customized messages
- Add specific examples to make them tangible and understandable
- Communicate about existing successes, as the City of Edmonds did with Energy Independence Day (see Appendix D for Further Resources)

The City is already undertaking a branding campaign to position itself as a green economy city, as well as a green exporter. Additionally, in partnership with the Chamber's Real Estate Roundtable, the City could pursue an effort to develop the community's identity as a hub for progressive builders.

Next Steps

The City of Hillsboro leaders will review this document to refine and complete the Phase I process for prioritization, resource allocation, timelines, and responsibilities. Top of the list is to establish the Hillsboro Sustainability Task Force and set the path for project direction going forward. Possible next steps could include:

- Develop a baseline/inventory of existing accomplishments, resources, and assets
  - Hillsboro Energy Map and slide decks created by the New Energy Cities team in support of the March 2012 workshop
  - Consolidating information on existing energy efficiency and clean energy program penetration rates (e.g., number of homes retrofitted, number of homes receiving solar installations from Hillsboro Solar Advantage)
- Set clear objectives consistent with community aspirations that connect economic strategy with clean energy solutions
- Assess additional data needs
- Develop specific program targets that can drive short-term action and innovation
- Establish serious but reasonable energy use targets over a 10-20 year period using the energy data presented at the Workshop the baseline, and informed by peer metrics
- Build essential partnerships to leverage resources
- Begin to develop a system for measurement, reporting, and verification

Several efforts are underway across the City (Appendix B), which have contributed to a deeper appreciation of energy issues. As these activities progress, they can help to inform new initiatives that will help link current activities to goals for the whole community.

- Set targets for all existing and new activities, including explicit elements to inform future actions
- Portland General Electric has deployed smart meters to nearly all of its customers; these meters will provide enhanced energy data collection, which in turn will offer opportunities to engage and educate energy consumers about the opportunities to monitor and manage energy usage.

After the HSTF is in place to guide Hillsboro's clean energy initiatives, decisions need to be made about which catalytic projects to start with and how they should be scoped and financed. Next attention will need to shift to public engagements strategies. When the projects, policy, financing, and engagement next steps are identified, the City will move on to Phase II implementation.

Overextending early in the process would undermine the overall success of the Opportunities Framework, and so clear focus areas are needed in the beginning. We recommend that the City of Hillsboro focus on narrowing the choices among the action areas listed in this Opportunities Framework. In each action area, the City could proceed by developing a workplan, determining responsibility, assigning tasks, and determining funding for successful implementation.

Phase II: Implementation—12 Months

The second phase of this Opportunities Framework centers on getting catalytic projects started, while building the critical relationships and resources needed to deliver these projects successfully and use them to inform future efforts. Phase II is focused on getting early projects implemented, so that the results of these projects can help shape longer-term policies and reinforce the emerging approach to community engagement:

1. Carry out the set of projects that will produce success to build upon, as well as data to inform future projects.
2. Roll out a communications strategy, developed in Phase I, with ongoing resources to ensure a consistent message and collaboration with community partners.
3. Refine the potential financing options for future projects, with an orientation toward testing and exploring priority options in order to resolve questions on legal structures, accounting and tax considerations, and risk analysis.

The transition from Phase I to II can be challenging and will require Hillsboro leaders to mobilize people and resources to prioritize the projects and goals that have been articulated and flesh out the desired projects' scope, scale, and financing.

Phase II should serve as the planning cycle for developing the Phase III timeline, preparing the community for an extension of the pilot projects across the community, refining the financing strategies and models for ongoing, long-term implementation. In addition, this process would create the capacity to monitor progress, measure impacts, assess costs and benefits, and inform adjustments and new directions.

Phase III: Refine and Scale Up-18 Months

In Phase III, the City of Hillsboro will get feedback on the impacts of the early pilot projects, and, presuming success, will have extensive political support due to partnership development and engagement with the community. Phase III becomes a threshold step, in which the community moves beyond pilot projects and into an ongoing, consistent implementation program of defined projects over a set period of time.

Phase III provides an 18-month period during which the community could strive to solidify the policy foundation for the next 20 years of project implementation.

1. Create and seed the community's finance and investment vehicles, with a strategy for ongoing funding or re-capitalization.
2. Develop a basket of incentives and requirements to effectively gain universal participation in efficiency, renewable energy, and infrastructure programs.
3. Forge lasting partnerships that ensure that progress is measured, results are communicated broadly, and the program is subject to routine review and analysis for improvements.
4. Invest in human resources to manage implementation of the array of activities, and institutionalize that capacity with stable funding and succession planning.

In Phase III, the City of Hillsboro leaders should consider developing a strategy of widespread deployment of energy efficiency, distributed renewable energy, electric vehicle infrastructure, and smart grid technologies that could include the following components. Phase III is too far out to be specific about what might be embraced at this stage of its New Energy City plan, but we feel it is useful to highlight some of the directions that could be explored:

A Long-Term High Performance Building Strategy

A future of very efficient buildings that produce their own energy and are part of an intelligent energy network will require aggressive and consistent efforts over time. Efforts should be made to put building codes in place that would allow for more green building branding, and that development standards and the county's comprehensive plan need to be revised with energy in mind.

A Long-Term Financing Approach

Local jurisdictions that develop innovative policies to reduce the risks associated with investment and add certainty to potential investors should be expected to gain access to long-term, patient sources of capital.

Distributed Renewable Energy Generation

A significant element of distributed generation could be addressed within a high-performance building strategy. However, substantial additional opportunities exist for communities to accelerate and deepen the role that distributed renewable sources could play in their overall approach.

Smart Grid Infrastructure

The City of Hillsboro should work closely with PGE and its smart meter deployment to maximize the benefits of that program for energy awareness.

Expanded Concept of Energy

Embrace a broader concept of sustainability and how it relates to energy and money to include food, recycling, preservation of trees, transit, and water.

Ongoing Recommendations

Throughout all Phases of the City of Hillsboro's Climate Action Plan Opportunities Framework, it is important to keep the following three ongoing requirements in mind:

Engagement – A consistent, sustained commitment by elected leadership to invest in engaging the community to fully understand the path and collective benefits to this New Energy System, and to support the needed policies, programs, and investment resources is crucial. This level of collaboration with the community is a significant step beyond traditional engagement efforts, and is critical to success.

Experimentation with New Policies and Programs – New policies and programs are needed, some of which will exceed expectations while others may fall short. The need to experiment and refine our approaches is a fundamental component of the leadership challenge and a defining element of a New Energy City. Such an approach means that elected officials and agency leadership will have to communicate effectively about the process for trying new ideas and refining them over time, and stay the course over time.

Institutional Capacity – Ongoing resources and training will be needed to support the City of Hillsboro's new energy efforts. The community and key partners, such as utilities, nonprofits and businesses, all need a focal point for collaboration, and need to be supported by this focal point in order for their efforts to consistently contribute to progress and support all of the innovations in clean energy that the City has such a strong appetite to explore.

Conclusion

Climate Solutions' New Energy Cities program works with innovative city and county leaders that wish to be early adopters of an integrated clean energy system that will bring economic development to their communities, reduce greenhouse gas emissions, and leverage public investment with large-scale private investment.

The New Energy Cities Team believes that the City of Hillsboro has considerable potential to be a successful pioneer community that fundamentally transforms the way it uses and produces energy to serve as a model for other communities in the Northwest and throughout the country.

Many stakeholders in the City of Hillsboro are passionate about embracing a clean energy future and motivated to do the hard work required to collaborate to fundamentally shift the way that energy is created and distributed in the area. Citizens of Hillsboro have a vision of where they would like the community to go and examples are already underway of what is possible that could be expanded on a larger scale. What is required now is the willingness to come together, prioritize the projects and initiatives called out in this Opportunities Framework, and allocate responsibility for making them happen.

We thank you very much for the opportunity to walk down the road with you to a new energy future for the City of Hillsboro and look forward to finalizing this Opportunities Framework and moving on to the Implementation Phase.

Appendix A: City of Hillsboro Energy Map

City of Hillsboro Energy Map 2010
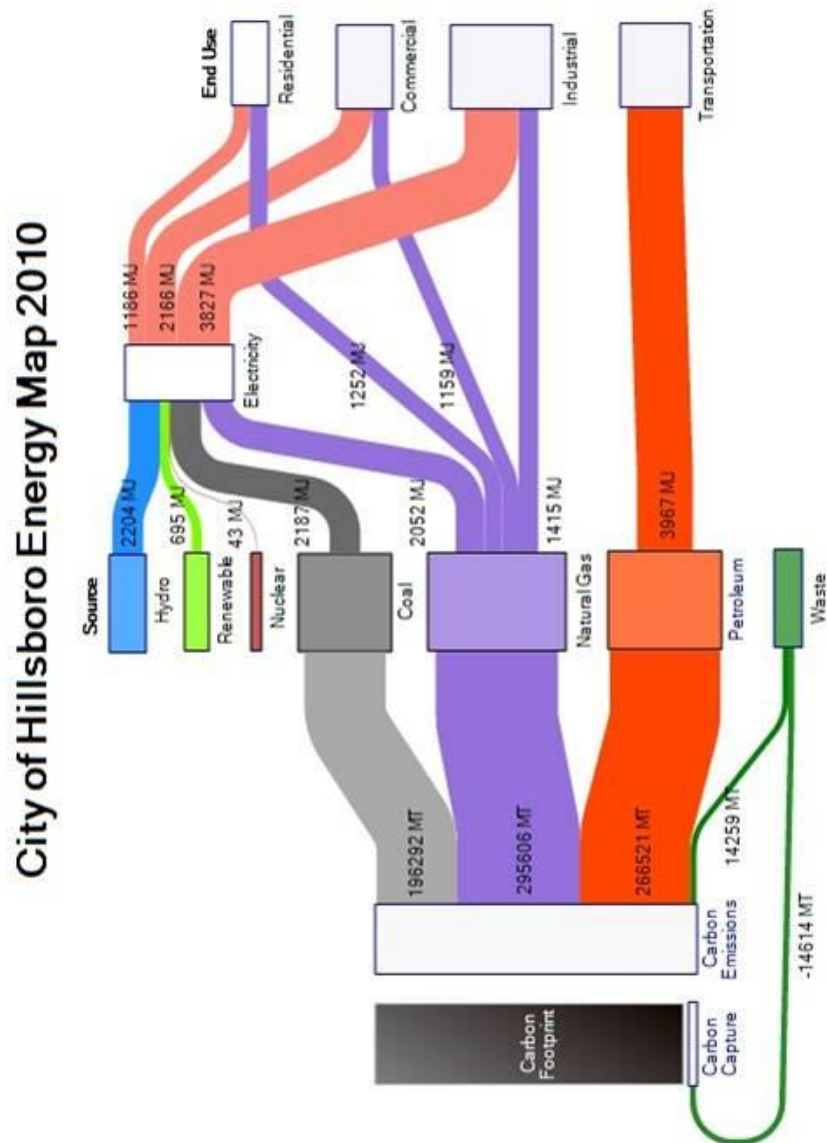
Appendix B: List of Assets and Existing Efforts

The City of Hillsboro and community members have initiated numerous clean energy and energy efficiency projects over the last several years. These efforts provide a strong foundation for launching an implementation of the Climate Action Plan Opportunities Framework. The following is a compendium of promising initiatives in the City. It is not intended to be exclusive, and the New Energy Cities team encourages City of Hillsboro leaders to edit and enhance this list.

- USEPA Green Power Partnership
- ODOE Cool Schools program
- ODOT Solar Highway program
- City of Hillsboro
  - Hillsboro Solar Advantage and no-cost solar permitting
- Energy Trust of Oregon
- Portland General Electric
  - Clean Wind program
  - Smart Grid program
- Northwest Energy Efficiency Alliance
- Umpqua Bank
- Clean energy and sustainability technical expertise within existing businesses
  - SolarWorld
  - Clear Edge
  - Intel
  - Epson
- Clean Energy Works Oregon

Appendix C: Sample Goals

The Jackson Hole Energy Sustainability Project over the next 20 years:
- Mitigate by 33% the additional 30MW of energy needed to meet Jackson Hole's load growth.
- Develop local renewable energy options to generate 2MW additional energy.
- Achieve 80% penetration in energy efficiency building retrofits in each community district.
- Define efficiency and renewable energy packages for installations with positive return on investment for low cost financing that allow for variable energy and technology prices.
- Use energy use and emissions inventory data and JHESP to support organizations working on reducing emissions from transportation.
- Encourage and advocate for maximum energy efficiency building codes for future development.

Wood River Valley, ID
- Brand the Wood River Valley region as a whole as state of the art solar area – Solar Sun Valley, attract business, attract people, build tourism and strengthen brand

- Maintain and improve what we have:

    – 100% retrofit all public buildings – local government sets an example

    – Retrofits of 50% - 75% with 30% reduction per building

    – Reduce WRV energy usage 15% by 2015 or 20% by 2020

    – Meet all new growth from conservation or renewable energy use

- Generate our own power:

    – Renewable energy green tag purchase goal of 50% by 2015 use funds locally

    – Increase reliability, energy assurance through local generation

    – Produce power from the sun

City of Edmonds, WA
- Carbon reduction goal for 2035 is 25% below 1990 levels

Thurston County, WA
- Net zero carbon emissions by 2020

Appendix D: Further Resources

These websites below are not intended to be a comprehensive list, but a small selection of online resources identified in response to interests expressed at the New Energy Cities Workshop on March 9, 2012.

Climate Solutions and New Energy Cities
- Solution Stories - http://climatesolutions.org/solution-stories

- New Energy Cities website and resource library- http://newenergycities.org

Building Energy Efficiency, Energy Disclosure, and Energy Information Programs
- Efficiency Cities Network - http://www.efficiencycities.org/

- New Buildings Institute Resource Library - http://newbuildings.org/document-library

- ENERGY STAR – http://www.energystar.gov/

- Database on State Incentives for Renewables and Efficiency - http://www.dsireusa.org

- Northwest Energy Efficiency Alliance - http://neea.org/

- American Council for an Energy-Efficient Economy - http://www.aceee.org/portal/local-policy

- Clean Energy Works Oregon - http://www.cleanenergyworksoregon.org/

- Seattle District 2030 - http://www.2030district.org/seattle/

- OPower - http://opower.com/

- RePower Bainbridge- http://positiveenergybi.org/repowerbainbridge

- Home Energy Rating certificate example from Daybreak, Utah - http://www.daybreakutah.com/wp-content/uploads/2011/08/8-261-HERS-Index-Certificate.pdf

- Press release from Daybreak, Utah describing that community's commitment to 100% Home Energy Rating certification- http://www.daybreakutah.com/hers-saves-homeowners%E2%80%99-money-makes-daybreak-a-national-leader

Renewable Energy
- Solarize Pendleton - http://solarizependleton.com/main/

- Ellensburg Solar Community Project - http://nwcommunityenergy.org/solar/solar-case-studies/chelan-pud

- Clean Edge - http://www.cleanedge.com/

Next Generation Infrastructure
- District energy website on waste heat recovery in the Vancouver, BC Olympic Village - http://vancouver.ca/sustainability/building_neu.htm

- *The Role of District Energy in Greening Existing Neighborhoods* primer by Preservation Green Lab and Center for Sustainable Business Practices, University of Oregon - http://newenergycities.org/resources/greening-existing-neighborhoods-a-district-energy-policy-primer/view

Job Creation
- *The West Coast Clean Economy: Opportunities for Investment and Accelerated Job Creation* – A report commissioned by the Pacific Coast Collaborative; prepared by Globe Advisors and The Center for Climate Strategies (March 2012) http://www.climatestrategies.us/library/library/view/972

- "Clean Green Jobs: Embracing the New Energy Era" – New Energy Cities blog (October 2011) - http://newenergycities.org/green-jobs-through-clean-energy-embracing-the-new-energy-era

- *Who's Winning the Clean Energy Race?* - A report by the Pew Environment Group (2010) - http://www.pewtrusts.org/our_work_detail.aspx?id=690

- *U.S. Green Building Council Green Jobs Study* – A report for the U.S. Green Building Council by Booz Allen Hamilton (2009)- http://newenergycities.org/resources/green-building-creates-green-jobs/view

- *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy* – A report by the University of Massachusetts-Amherst and Center for American Progress (September 2008)- http://newenergycities.org/resources/green-recovery-a-program-to-create-good-jobs-and-start-building-a-low-carbon-economy/view

- *Green Jobs and Workforce Development* – A report by Center on Wisconsin Strategy, the Workforce Alliance, and the Apollo Alliance (2008) - http://www.cows.org/pdf/rp-greenerpathways.pdf

Community Outreach
- Allegheny County's Coordinated Weatherization Campaign - http://www.efficiencycities.org/wp-content/uploads/120612/CWCfinal.pdf

- Edmonds Energy - http://edmondsenergy.org/

Financing

- *Energizing Cities: New Models for Driving Clean Energy Investment* – A report by New Energy Cities
  http://newenergycities.org/most-recent-posts/resources/energizing-cities-new-models-for-driving-clean-energy-investment/view